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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/362,022	07/27/1999	ROBERT J. MEYER	D/96602Q1	6313
7590 03/08/2005 JOHN E BECK XEROX CORPORATION XEROX SQUARE 20A ROCHESTER, NY 14644			EXAMINER ROGERS, SCOTT A	
			ART UNIT 2626	PAPER NUMBER

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/362,022	<b>Applicant(s)</b> MEYER ET AL.	
	<b>Examiner</b> Scott A Rogers	<b>Art Unit</b> 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 1-12 is/are allowed.  
6) ☒ Claim(s) 13-17 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 27 July 1999 & 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see pages 6-9 in the response filed 3 December 2004, with respect to the rejections of claim(s) 1-17 under 35 U.S.C. 112 and 103(a) have been fully considered and are persuasive. Therefore, those rejections have been withdrawn. However, upon further consideration, new grounds of rejection of claims 13-17 are made in view of newly cited prior art as set forth below.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Allen (US 6266154 B1).

Referring to claim 13, Allen discloses a method in a digital imaging system for optimizing a rendition of a document image for an electrostatographic system (i.e., what Allen refers to as a standard laser printer in col. 1, line 60 or Xerographic laser printer in col. 6, line 28), comprising:

receiving a representation of the document image (col. 2, lines 38-39 and col. 6, lines 7-9), and

processing the document image to form a halftone image with a halftone cell comprising embedded auxiliary pixels (col. 2, lines 39-41 and col. 6, lines 16-25) to improve the rendition of the document image (col. 1, lines 50-53, col. 7, lines 5-12, and col. 7, line 21 to col. 8, line 3).

Applicant's process of embedding auxiliary pixels (note page 8, lines 5-17) reads on Allen's process of embedding fractional size pixels halftone cells to improve rendition of the document image.

Referring to claim 14, it is evident from Allen's discussion of Fig. 21 in col. 6, that the formation of the halftone image with a halftone cell comprising embedded auxiliary pixels is done using digital processing system 252 (i.e., a digital front end) prior to the resulting enhanced digital video signal being presented to the modulator 256 which drives the laser in the print engine (col. 6, lines 35-37).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen as applied to claim 13 above, and further in view of well known prior art.

Referring to claims 15-17, while Allen does not specifically discuss forming a cluster dot type halftone cell, a dispersed dot type halftone cell, or a stochastic type halftone cell, Official Notice is taken that such types of halftone cells are notoriously old and well known in the prior art.

It would have been obvious to one of ordinary skill in the art to have formed such well known types of halftone cells in Allen in order to benefit from the known characteristics of these types of halftone cells which include a perceived linearly increasing density level with a cluster dot type halftone cell, a smooth variation in tonal density and high frequency fidelity with a dispersed dot type halftone cell, and an uncorrelated dot structure and no low frequency graininess with a stochastic type halftone cell.

#### ***Allowable Subject Matter***

Referring to claims 1-8, the prior art searched and of record neither anticipates nor suggests in the claimed combinations, in an electrostatographic system, substituting at least one auxiliary pixel for one of the plurality of original pixels of a halftone cell to improve edge displacement or halo problems in the printing of the halftone cell.

Referring to claims 9-12, the prior art searched and of record neither anticipates nor suggests in the claimed combinations, in an electrostatographic system, processing an original pixel data of a source image with a halftone cell comprising embedded

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auxiliary pixels therein to improve edge displacement or halo problems in the printing of the image.

***Other Cited Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rylander (US 5602572) discloses a halftone dot thinning technique in an inkjet printing system.

Zeck et al (US 6020979) discloses replace some edge pixels with gray level pixels to improve edge resolution.

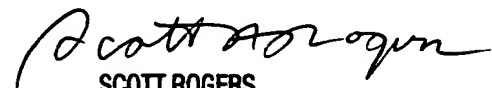
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Rogers whose telephone number is 703-305-4726. The examiner can normally be reached on Monday & Wednesday 6:00am-6:00pm and Tuesday & Thursday 6:00am-2:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on 305-4863.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Customer Service at 703-306-0377. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

7 March 2005

  
SCOTT ROGERS  
PRIMARY EXAMINER